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CW#53H: Composite Functions

Honors Geometry

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| **CRS** | **Geometry Content/FUN601 - Ev**aluate composite functions at integer values. |
| **Objective** | * 1. - Evaluate composite functions at integer values**;** 10.2 - Write an expression for the composite of two simple functions. |

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| 1) Let f(x) = 5x + 2 and g(x) = x - 2.  a) Find f(g(-4)).  b) Find g(f(-4). | 2) Let j(x) = and k(x) = -0.5x.  a) What is j(k(6))?  b) What is (kj)(6). |
| 3) Let p(x) = . Find p(p(-6)). | 4) Let q(x) = . Find q(q(-2)). |
| 5) Let f(x) = 3x- 2 and g(x) = .  a) Find f(g(25)).  b) Find g(g(1296)) | 6) Let w(x) =  and r(x) = .  a) Find (wr)(9)  b) Find (rr)(256). |
| 7) Let f(x) = 6x + 3, g(x) = , and h(x) = -7x  Find h(f(g(3))). | 8) Let f(x) = 2x- 2, g(x) = , and h(x) = 2x  Find g(h(f(7))). |
| 9 a) Compute **f(g(x))** if g(x) = 2x + 1 and  f(x) = x- 3.  b. Compute **g(f(x))** if g(x) = -2x + 1 and  f(x) = -x - 3.  c. Compute **f(f(x))** if g(x) = 8x2 and f(x) = 0.5x - 2. | 10 a) If g(x) = 3x + 2 and f(x) = x2 + 3, compute **(g f)(x)**.  b. If g(x) = and f(x) = x2 + 3, compute **g f(x)**.  c. Compute **g g(x)** if g(x) = 2x + 1 and f(x) = 1x- 3. |
| 15) Compute a(b(x)) if a(x) = 2x -1 and  b(x) = 3x + 3. | 16) Compute b(a(x)) if a(x) = 2x -1 and b(x) = 3x + 3. |
| 17) Compute a(b(x)) if a(x) =  and  b(x) = 2x - 8.  *SIMPLIFY AT THE END!* | 18) Compute b(b(x)) if a(x) = 2x -1 and b(x) = 8x - . |
| 19) Compute a(b(-2)) if a(x) = -5x3 and  b(x) =. | 20) Compute b(a(-2)) if a(x) = 2x -1 and b(x) = 3x + 3. |
| 21) Let g(x) =  and j(x) = x + 2.  a. Find g j(x).  b. Find j g(x). | 22) Let f(x) =  and j(x) = 2x + 2.  a. Find f j(x).  b. Find j f(x). |
| |  |  |  | | --- | --- | --- | | x | f(x) | g(x) | | -1 | -2 | 2 | | 0 | 1 | -3 | | 1 | 3 | -2 | | 2 | -3 | 1 |   23)  **a.** Find (g f)(0).  **b.** Find (f g)(-1).  **c.** Find g(g(2)). | 24) Let f(x) =  and g(x) = x - 3.  a. Find g f(x).  b. Find f g(x). |
| **CHALLENGE PROBLEMS & ACT Style** | |
| 25)     1. 27 2. 30 3. 58 4. 72 | 26) If f(x) = 2x² + x and g(x) = f(f(x)), what is the value of g(1)?   1. 3 2. 18 3. 21 4. 39 |
| **Yay! Brain Teasers**  **“Through great struggle comes great reward!”** | |
| Connect the nine dots using 4 straight lines and without lifting the pencil. | You have six eggs in a basket. How do you distribute them so that one egg remains in the basket?  http://2.bp.blogspot.com/-qY9r5kizcK0/T3pV_vw-9jI/AAAAAAAAF98/0yl9S9DW8fI/s1600/basket.jpg |